

CLAIMS

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1. A system for soft tissue reconstructive surgery comprising:
a soft tissue fixation device, wherein said fixation device affixes at least two intact anatomic soft tissue structures;
and an applicator that inserts the soft tissue fixation device from a first anatomic structure into a second anatomic structure and fixatingly positions said soft tissue fixation device within said first and said second anatomic structures.
 - 10 2. The system of claim 2, wherein said first anatomic structure is suspended from said second anatomic structure by a positioning of said soft tissue fixation device.
 - 15 3. The system of claim 1 wherein the first anatomic structure lies in contiguity with the second anatomic structure in a native anatomic state.
 4. The system of claim 1, wherein the soft tissue fixation device further comprises a means for adjusting tightness of affixation of said first anatomic structure to said second anatomic structure after the soft tissue fixation device has been positioned.
 - 20 5. The system of claim 1, wherein the soft tissue fixation device comprises a screw.
 6. The system of claim 1, wherein the soft tissue fixation device comprises a ring.
 - 25 7. The system of claim 1, wherein the soft tissue fixation device comprises an anchor.
 8. The system of claim 1, wherein the soft tissue fixation device comprises a barb.

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9. The system of claim 8, wherein the barb is flexible.
10. The system of claim 9, wherein the at least one flexible barb springs from a closed position to an open position when it is positioned within the second anatomic structure.
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11. The system of claim 9, wherein the at least one flexible barb is urged from the closed position to the open position by the applicator.
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12. The system of claim 9, wherein the at least one flexible barb is urged from the closed position to the open position by proximally directed traction.
13. The system of claim 1, wherein the soft tissue fixation device comprises a staple.
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14. The system of claim 13, wherein the applicator alters the shape of the staple after said staple is driven from the first anatomic structure into the second anatomic structure, thereby affixing said staple in said at least two anatomic structures.
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15. The system of claim 1, wherein the soft tissue fixation device is coated with a substance capable of promoting epithelialization.
16. The system of claim 15, wherein the substance is selected from the group consisting of collagen, growth factor or adhesion ligand.
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17. The system of claim 1, wherein the soft tissue fixation device is provided with a coating that stimulates tissue ingrowth.

18. The system of claim 1, wherein a surface of the soft tissue device is treated to stimulate collagen deposition.
19. The system of claim 1, wherein the soft tissue fixation device formed at least in part from a bioabsorbable material.
20. The system of claim 1, wherein the applicator is adapted for inserting at least two soft tissue fixation devices simultaneously.
- 10 21. The system of claim 1, further comprising a remover to extricate the soft tissue fixation device from said at least two anatomic structures
22. The system of claim 1 wherein the soft tissue fixation device may be removed from the at least two anatomic structures by manipulation.
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23. The system of claim 1, wherein the soft tissue fixation device comprises adjustable ratchets.
- 20 24. The system of claim 1, further comprising a template that guides a positioning of the soft tissue fixation device.
25. A method for soft tissue reconstruction comprising:
providing a soft tissue fixation device and an applicator,
identifying at least two anatomic structures suitable for coaptation, wherein coaptation is determined to be an effective mechanism for soft tissue reconstruction,

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stabilizing at least two anatomic structures in surgical proximity,
driving the soft tissue fixation device from a first anatomic structure into a second
anatomic structure, and
engaging the soft tissue fixation device within the second anatomic structure.

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26. The method of claim 19, further comprising

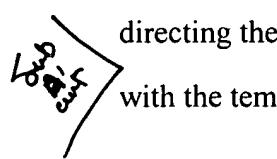
providing a remover for atraumatically removing the soft tissue fixation device from the
at least two anatomic structures,
examining a position of the soft tissue fixation device within the first and the second
10 anatomic structure to determine whether said soft tissue fixation device is
malpositioned, and
employing the remover to remove the soft tissue fixation device that is malpositioned.

27. A method for supporting a soft tissue structure, comprising:

15 providing a soft tissue fixation device and an applicator,
identifying at least two anatomic structures physiologically adapted for supporting the
soft tissue structure,
positioning a first anatomic structure in juxtaposition to a second anatomic structure,
thereby to support the soft tissue structure, and
20 affixing the first anatomic structure to the second anatomic structure with the soft tissue
fixation device inserted by the applicator.

28. The method of claim 27, further comprising

25 positioning a template dimensionally adapted for guiding a placement of the soft tissue
fixation device, and

 directing the soft tissue fixation device into the first anatomic structure in accordance with the template.

29. The method of claim 27, further comprising examining a position of the tissue fixation device within the at least two anatomic structures and removing the soft tissue fixation device that is malpositioned.

10 30. The method of claim 27, wherein the soft tissue fixation device is selected from the group consisting of staples, screws, barbed tacks, and anchors.

31. The method of claim 29, further comprising providing a remover to extricate the fixation device from the at least two anatomic structures, and employing the remover to remove the soft tissue fixation device that is malpositioned.

15 32. The method of claim 29, wherein the soft tissue fixation device that is malpositioned is removed by traction.

20 33. The method of claim 27, wherein the soft tissue structure comprises the rectum, wherein the first anatomic structure is a lateral vaginal sulcus and wherein the second anatomic structure comprises the AFTP or the levator ani.

34. The method of claim 27, wherein the soft tissue structure is selected from the group consisting of the bladder, the urethra, the vaginal vault and the uterus.

35. The method of claim 27, further comprising identifying at least one anatomic structure by a diagnostic modality selected from the group consisting of MRI, fluoroscopy, CT scan, conventional radiology, ultrasound, laparoscopy and endoscopy.
- 5 36. The method of claim 27, further comprising guiding the fixation device into at least one anatomic structure by a modality selected from the group consisting of MRI, fluoroscopy, CT scan, conventional radiology, ultrasound, laparoscopy, endoscopy, direct vision and intraoperative palpation.
- 10 37. A soft tissue fastener system, comprising
means for penetrating an intact outer wall of a first soft tissue
means for penetrating a second soft tissue, and
means for affixing said first soft tissue to said second soft tissue
- 15 38. The system of claim 37, further comprising a means for detaching an affixation between said first soft tissue and said second soft tissue without disturbing physiological integrity of said first and second soft tissues.
39. A method of surgical paravaginal repair, comprising:
20 providing a soft tissue fixation device;
providing an insertion device adapted for inserting said soft tissue fixation device;
placing the soft tissue fixation device at least one of vaginally and laparoscopically through the stapling device; and
approximating the superior lateral sulci to the ATFP without exposing the ATFP
25 through a surgical incision in a vaginal wall.

40. A method for diagnosing a pelvic floor defect, comprising:
- 5 providing a template adapted for insertion in a vagina, wherein said template replicates forces applied during a paravaginal repair,
- 5 inserting the template into the vagina, and
- 5 observing whether the pelvic floor defect is reduced.

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